



DEPARTMENT OF BIOLOGY

## Course Preparation Guidelines for Merrimack College Students Interested in Medical, Dental and Veterinary Schools

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Acceptance into professional medical schools takes planning, preparation and a high level of academic performance. Students contemplating a professional career as a medical doctor (MD), doctor of osteopathic medicine (DO), dentist (DMD) or veterinarian (DVM) need to begin to gather information from a variety of sources early in their college careers. Some good places to start gathering information about a professional career in health care are the websites listed below. Below the links are some basic, initial guidelines to follow. Students are encouraged to investigate the requirements for the specific schools they might like to attend.

### MEDICAL SCHOOL

ASSOCIATION OF AMERICAN MEDICAL COLLEGES (AAMC)

<http://www.aamc.org/>

AAMC MEDICAL SCHOOL LISTING

[http://services.aamc.org/memberlistings/index.cfm?fuseaction=home.search&search\\_type=MS](http://services.aamc.org/memberlistings/index.cfm?fuseaction=home.search&search_type=MS)

AMERICAN ASSOCIATION OF COLLEGES OF OSTEOPATHIC MEDICINE (AACOM)

<http://www.aacom.org/>

American Osteopathic Association (AOA)

<http://www.osteopathic.org/>

American Orthopaedic Society for Sports Medicine (AOSSM)

<http://www.sportsmed.org/>

### FYI...

DID YOU KNOW THAT MD/PHD STUDENTS GET THEIR MEDICAL SCHOOL AND GRADUATE SCHOOL TUITION PAID FOR AND RECEIVE A STIPEND?

**DENTAL SCHOOL**

AMERICAN DENTAL ASSOCIATION (ADA)

<http://www.ada.org/public/education/careers/index.asp>

DENTAL ADMISSION TEST (DAT)

<http://www.ada.org/prof/ed/testing/dat/index.asp>**VETERINARY SCHOOL**

ASSOCIATION OF AMERICAN VETERINARY MEDICAL COLLEGES

<http://aavmc.org/>

CUMMINGS SCHOOL OF TUFTS UNIVERSITY

<http://vet.tufts.edu/prospective.php>**RELATED FIELDS***NURSE PRACTITIONER*

AMERICAN COLLEGE OF NURSE PRACTITIONERS

<http://www.acnpweb.org/i4a/pages/index.cfm?pageid=1>*PHYSICIAN ASSISTANT*

AMERICAN ACADEMY OF PHYSICIAN ASSISTANTS

<http://www.aapa.org/>**When Students Enter Medical School**

The average age of matriculants into medical school is now between 23 and 24. Dental and veterinary schools are similar. That means that fewer and fewer students are accepted directly after graduation from their undergraduate institution. You should factor this into your plans. There are many possible paths to follow. In the intervening time, you should do something that enhances your life experience in a meaningful way, such as gaining additional experience in a biomedical or clinical setting.

## UNDERGRADUATE COURSE PREPARATION

Individual medical, dental and veterinary schools vary in their specific requirements. A good strategy is to take courses as an undergraduate that prepare for all contingencies, as well as courses that provide solid preparation for the standardized entrance exams for each profession. Taking the time early in one's career to investigate individual schools is also an excellent way to prepare. What follows are sample curricula for each degree program.

**NOTE: You do NOT have to be a science major to apply to medical or dental school. 50% of the matriculants to medical school are non-science majors who have completed all the course requirements listed below.**

### Medical Schools (MD and DO degrees)

Commonly required and recommended courses for medical schools (MD and DO degrees). Check with individual programs for specific requirements. *Note: Other types of degree programs have different lists of requirements.*

Universally required:

- Intro Bio I and II, with laboratory
- General Chemistry I and II, with laboratory
- Organic Chemistry I and II, with laboratory
- Physics I and II (algebra or calculus based), with laboratory
- Two semesters of English composition

Strongly recommended:

- Biochemistry I
- Genetics
- Statistics
- Calculus I
- Sociology and/or Psychology

### Veterinary Schools (DVM degrees)

Vary in their pre-requisites. What follows is an all purpose pre-vet curriculum:

- General Biology with laboratory (two semesters)
- Biochemistry
- Comparative Physiology or Zoology with laboratory
- Microbiology with laboratory
- General Chemistry with laboratory (two semesters)
- Organic Chemistry with laboratory (two semesters)
- Physics (two semesters)
- Genetics (one semester)
- Biochemistry (one semester)
- Mathematics (two semesters), calculus and statistics
- English (two semesters)
- Social and Behavioral Sciences (two semesters)
- Humanities and Fine Arts (two semesters)

## Dental Schools (DMD degrees)

Requirements are similar to those above.

From the American Dental Association (ADA)...

*“General biology, organic and inorganic chemistry, biochemistry and physics are recommended courses to take in college. Majoring in science is not a must, but completion of the pre-dental science requirements is necessary.”*

Required Prerequisite Courses for the Boston University School of Dentistry:

Biology. One-and-one-half years with lab (12 semester hours). Suggested courses include basic biology, genetics, embryology, molecular biology, cell biology.

Biochemistry.

Chemistry. Two years with lab divided equally between general and organic chemistry courses. (16 semester hours).

Physics. One year with lab (8 semester hours).

English. One year or the equivalent at the college level, even if the applicant received advanced placement credit or was exempted from English courses on entry into college.

Mathematics. One year (6 semester hours). A basic understanding of calculus is needed.

Social Sciences and Humanities. Three years (18 semester hours).

***For a successful application, you should strive for a minimum of:***

- GPA > 3.4
- several extracurricular activities at which you excel
- extensive volunteer work, laboratory research, internship and/or job related experience
- excellent reading and writing skills
- completion of specific course requirements for the schools to which you intend to apply (see a sample list below, and visit individual school websites)
- a score of 30 on MCAT (medical college admissions tests), or equivalent DAT (dental) and GRE (veterinary school) scores. This will require test taking skill preparation, in addition to reviewing the facts for the physical science and biological science portions of the test.
- Medical schools also require a letter of evaluation from the Health Professions Advisory Committee at each undergraduate institution. Please see the *Guidelines for Obtaining a Health Professions Advisory Committee Letter* from Merrimack College.

**For more information, please contact:**

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